REMARKS

Notice of Related Case

The Applicant respectfully directs the Examiner's attention to U.S. Patent Application 10/873,550, which is related to the present case and was allowed by you on February 13, 2006.

Objections

Claim 5 was objected to because of a missing colon at the end of the preamble. This has been fixed in the amended claim.

Novelty Rejections

Claims 1-20 were rejected under 35 USC 102(b) as being anticipated by Nelson et al. (US 6,148,004). Nelson teaches a method and apparatus to "multiplex multiple ESCON channels over a single Fibre Channel connection to take advantage of the latter's much higher relative [to ESCON] bandwidth." (col. 1 ll.56-58). The multiplexed frames are transmitted to ports of an ESCON switch (Fig. 1). All frames in a given sequence are sent to the same port (col. 3 ll. 53-57) after being converted to ESCON frames (col. 3 ll. 58-67). Frames in a sequence are not necessarily contiguous[c1], because a look up table is maintained specifying which sequence identifiers (OX_IDs) are active at any given time (col. 4 ll. 31, 32; col. 5 ll. 32-35, 44-46). Once the end of a particular sequence is detected, the connection of a given sequence through its OX_ID to the port is terminated (Fig. 2A steps 104, 114, 116).

Our amended independent claim 1 is patentably distinct from Nelson '004 in a number of respects, including the following:

- We claim a cell-based switch. The ESCON switch taught by Nelson is not cell-based. Also, Nelson only processes whole frames, which for the purpose of that

invention are "indivisible" (col. 1 line 31). A cell-based switch, in contrast, breaks a frame's contents into cells.

- Our claim 1 includes a "switch input" and a "switch output" and describes processing of a "frame payload" between the switch input and switch output. Nelson only describes processing in preparation for entry into a switch (see, e.g., Fig. 2A), not what happens inside the switch.
- The connection that is released in Nelson is a connection external to a switch from a Fibre Channel front end to a set of ports (Fig. 1). We release an internal connection within a switch between an input port and an output port.
- Nelson must examine each incoming frame to see if its identifier (OX_ID) matches a list of identifiers for all open sequences. In this way, Nelson facilitates multiplexing of frames. Since our claim deals with the end-to-end processing of a single frame, we have no such identifier-matching requirement.
- Nelson determines the start of a sequence in the same logical process used to determine its end and cut off the connection (Fig. 1). In our claim, the switch input contains "logic to ... establish a connection" and to "transmit an end-of-packet (EOP) indicator designating the end of the frame payload". The logic to terminate the connection is performed by the switch output, and is thus independent of the logic to establish the connection. The switch output "release[s] the connection upon detection that the EOP indicator has been received at the output port."

Amended claims 2-4 and new claims 21-24 should be allowable because they are dependent on allowable base claim 1. Claim 2 deserves note because it specifically claims the nature of the switch at the cell level, stating that the switch input "contains further logic to partition the frame payload among cells in a packet." Nelson contains no concept comparable to partitioning a frame payload among cells.

Independent claim 5 has been amended to overcome a minor informality pointed out by the Examiner. Despite a few editorial changes. it has not been amended substantively. Claim 5 is patentably distinguishable from Nelson in a number of respects, including:

- Our cells are "fixed length" while the frames of Nelson have variable length.

- Claim 5 includes a step involving "releasing a switch connection prior to transmission of the number of cells corresponding to a maximum packet length for packets in the frame-based protocol.." Nelson, in contrast, releases a connection to a link controller external to a switch (col. 4 ll. 58-62), rather than a connection that is within a switch.
- Referring to the same step in claim 5, if and to the extent that one can draw a correspondence between Nelson's sequence of frames and our packet of cells, our maximum packet length limitation is a clear difference because there is no limit in principle to the number of Fibre Channel frames in a sequence. However, a single frame, and in particular a single Fibre Channel frame, does have a maximum size. Also, as already mentioned, each cell has a fixed length. Consequently, calculating a number of cells corresponding to a maximum packet length makes sense in our context, while it does not in Nelson.
- The Office Action states that the End of Frame (EOF) disclosed by Nelson (col. 7 ll. 36-39) is functionally equivalent to an EOP indicator. While it is true that both the EOP and the EOF each delimit the end of a data structure, Nelson does not use the EOF to trigger releasing his connection. In fact, the presence of an EOFt is a prerequisite in Nelson to *opening* a connection (ll. 38-44). We claim, on the other hand, "triggering said releasing on recognition of an End of Packet (EOP) indicator set in any cell of a data stream."

Claims 6-13 all depend ultimately on base claim 5 and should therefore be allowable.

Independent apparatus claim 14 was also rejected as being anticipated by Nelson and should be allowed for the same reasons as method claim 5. Claims 15-18 and 20 depend on base claim 14, and therefore should be allowable. Claim 19 has been cancelled.

New independent apparatus claim 25 and method claim 30 each involve "partition[ing] the frame payload among cells having the same capacity within a packet as cell payloads, at least one cell other than the last cell having a payload size less than the cell capacity." The idea that not all the cells need to be filled to capacity

distinguishes Dai (US 5,781,549), as described in our Background section ([0013]; compare Figures 3A and 3B). Dai teaches the division of variable length Ethernet frames into fixed length cells. The cells in Dai all have the same payload size, except possibly the last cell, while the valid byte count field of the present invention allows a cell other than the last to have a payload less than capacity. A consequence of allowing incompletely filled first or middle cells as in our invention is to allow cells to be sent from the switch input to the switch output at a fixed rate that can be different from the rate at which frames are received from the source at the switch input. Claims 26-29 should be allowable as depending on base claim 25; similarly for claims 31-36, which depend on base claim 30.

All amendments are supported by the specification.

CONCLUSION

All of the claims remaining in this application should now be seen to be in condition for allowance. The prompt issuance of a notice to that effect is solicited.

Respectfully submitted,
MCDATA CORORATION
By its attorneys:

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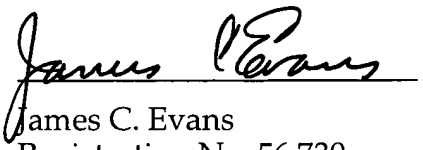

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